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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,509	06/07/2002	Hidetoshi Yokota	Q68269	4003

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT PAPER NUMBER

2855

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,509

Applicant(s)

YOKOTA ET AL.

Examiner

Eric S. McCall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 25-39 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 2, 6, 7, 9, 16-18 and 25-39 is/are allowed.
6) ☒ Claim(s) 1, 3, 5, 8 and 10 is/are rejected.
7) ☒ Claim(s) 4 and 11-15 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 07 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date Oct. 06, 2004
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

VEHICLE RUNNING STATE ESTIMATION
METHOD AND APPARATUS, VEHICLE CONTROL
APPARATUS AND TIRE WHEEL

NON-FINAL OFFICE ACTION

In response to the Applicant's Request for Continued Examination (with amendment)
dated Nov. 29, 2004:

CLAIMS

35 U.S.C. § 102

In response to the Applicant's amendments, the rejection of claims 1, 3-5, and 8-11 under 35 U.S.C. 102(b) as being anticipated by Hodges, Sr. et al. (5,065,618) as set forth in the previous office action (5/28/04) has been overcome.

However, the following now applies:

Claims 1, 3, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent Application EP 0 891 904 A2.

With respect to claim 1, said European Patent Application, as cited by the Applicant as admitted prior art, discloses a vehicle running state estimation method comprising:

detecting a vibration level of a portion below a spring of a running vehicle (ie. wheel vibration; page 3, lines 30-33); and

estimating the running state of the vehicle by determining a degree of slipperiness of a road surface on which the vehicle is running and a running state of each tire (page 5, line 55 to page 6, line 2),

wherein said determining is based on the detected vibration level.

With respect to claim 3, the prior art suggests that a frequency of the detected vibration level is analyzed to calculate a vibration level at a predetermined frequency band and the degree of slipperiness of the road surface is estimated from the calculated vibration level (page 6, lines 5-11 and 28/29).

With respect to claim 8, the prior art discloses a vehicle running state estimation apparatus comprising:

means of detecting a vibration level of a portion below a spring of a running vehicle (ie. wheel vibration; page 3, lines 30-33);

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means of calculating a vibration level at a predetermined frequency band by analyzing frequency of the detected vibration level (page 6, lines 5-11 and 28/29); and

road surface condition estimation means for estimating a degree of slipperiness of the road surface on which the vehicle is running from the calculated vibration level (page 6, lines 5-11 and 28/29),

wherein the running state of the vehicle is estimated based on the degree of slipperiness of the road surface received from the road surface condition estimation means.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 891 904 A2.

With respect to claim 5, said European Patent Application discloses detecting a vibration at a point below the spring of the vehicle in order to estimate the degree of slipperiness of the road surface.

However, said application fails to explicitly disclose detecting the vibration levels at two points below the spring of the vehicle in order to estimate the degree of slipperiness of the road surface.

Nonetheless, it would have been obvious to one having ordinary skill in the art armed with said teaching to detect vibration levels at two points below the spring instead of just one.

The motivation being that by detecting vibration at two points instead of just one, a more accurate value of vibration may be obtained because an average of the two vibration levels can be used or a comparison made between the two vibration levels so that the used vibration level is deemed accurate. In short, two vibration level detecting points will produce a more accurate description of the overall vibration level than just one point.

With respect to claim 10, said claim parallels that of claims 5 and 8. Thus, said claim is rejected for the same reasoning as that of claims 5 and 8.

Response to Arguments

The Applicant's arguments have been considered and, in combination with the Applicant's amendments, have been found to be persuasive. As such, the rejection of the claims as set forth in the previous office action (5/28/04) and argued here against has been overcome.

Allowable Subject Matter

Claims 4 and 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2, 6, 7, 9, 16-18, 25-39 have been found to be allowable over the prior art.

CITED REFERENCES

The Applicant's attention is directed to the enclosed "PTO-892" form for the prior art made of record at the time of this action.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric S. McCall
Primary Examiner
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Feb. 10, 2005